

# KIC 005546761

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005546761-01	OBS	2160.01	17.669971	131.604661	324.2	6.406	19.4	21.4	1.25	5795	2.69	86.57

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005546761-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

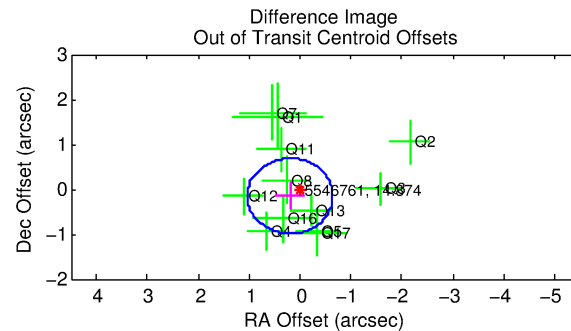
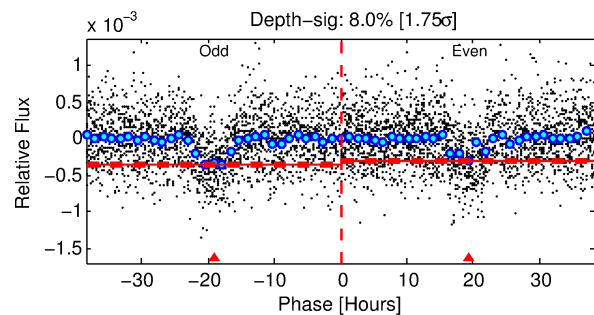
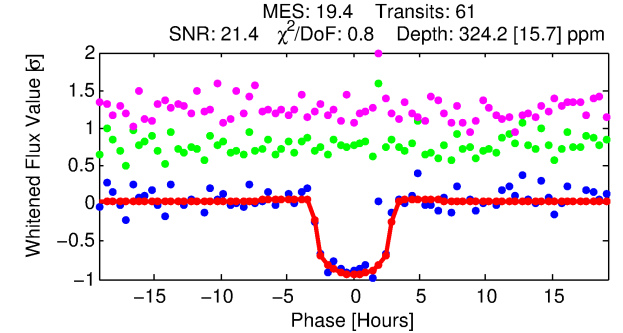
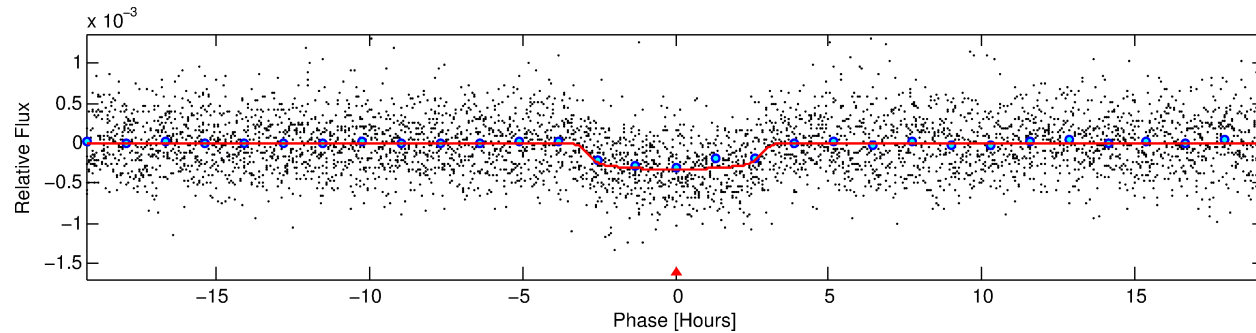
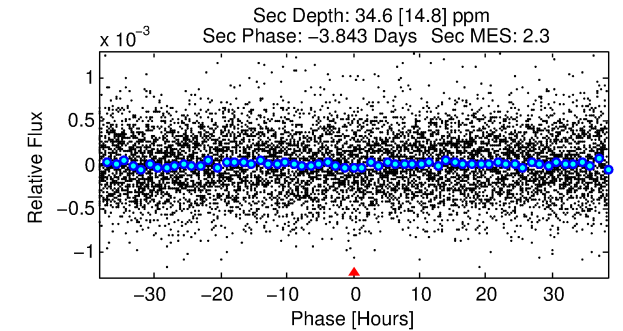
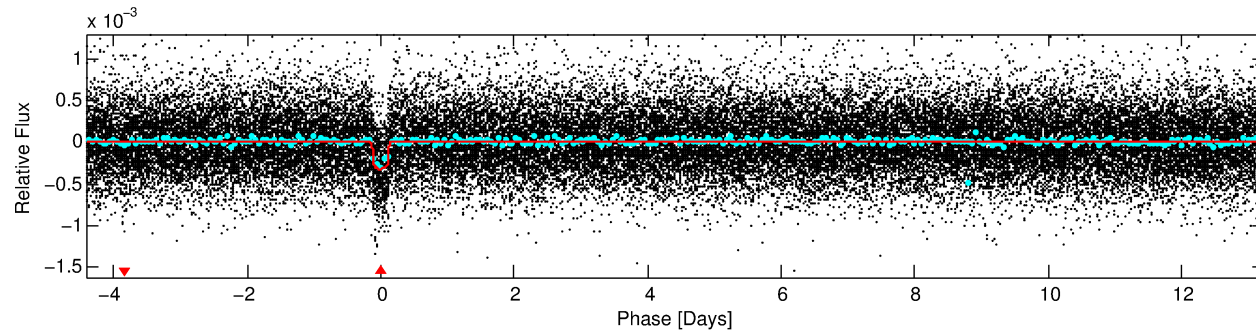
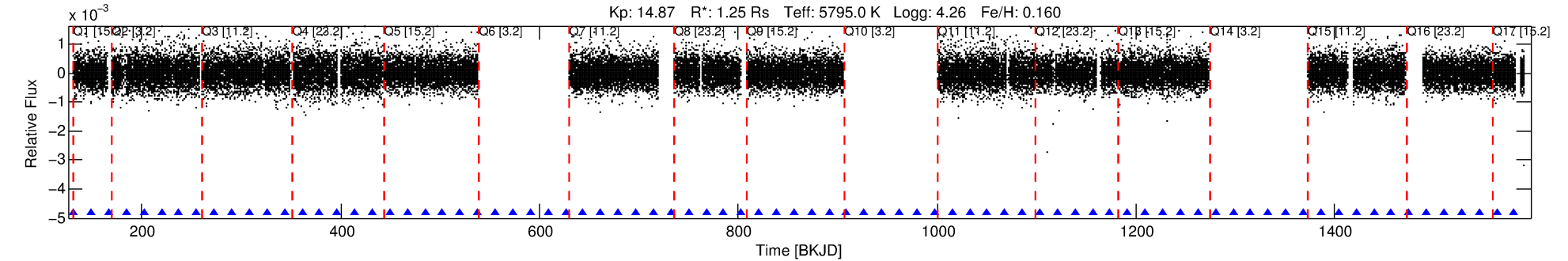
## Ephemeris Match Information For 005546761-01

No Significant Match Found

# DV One-Page Summary

KIC: 5546761 Candidate: 1 of 1 Period: 17.670 d

KOI: K02160.01 Corr: 0.949



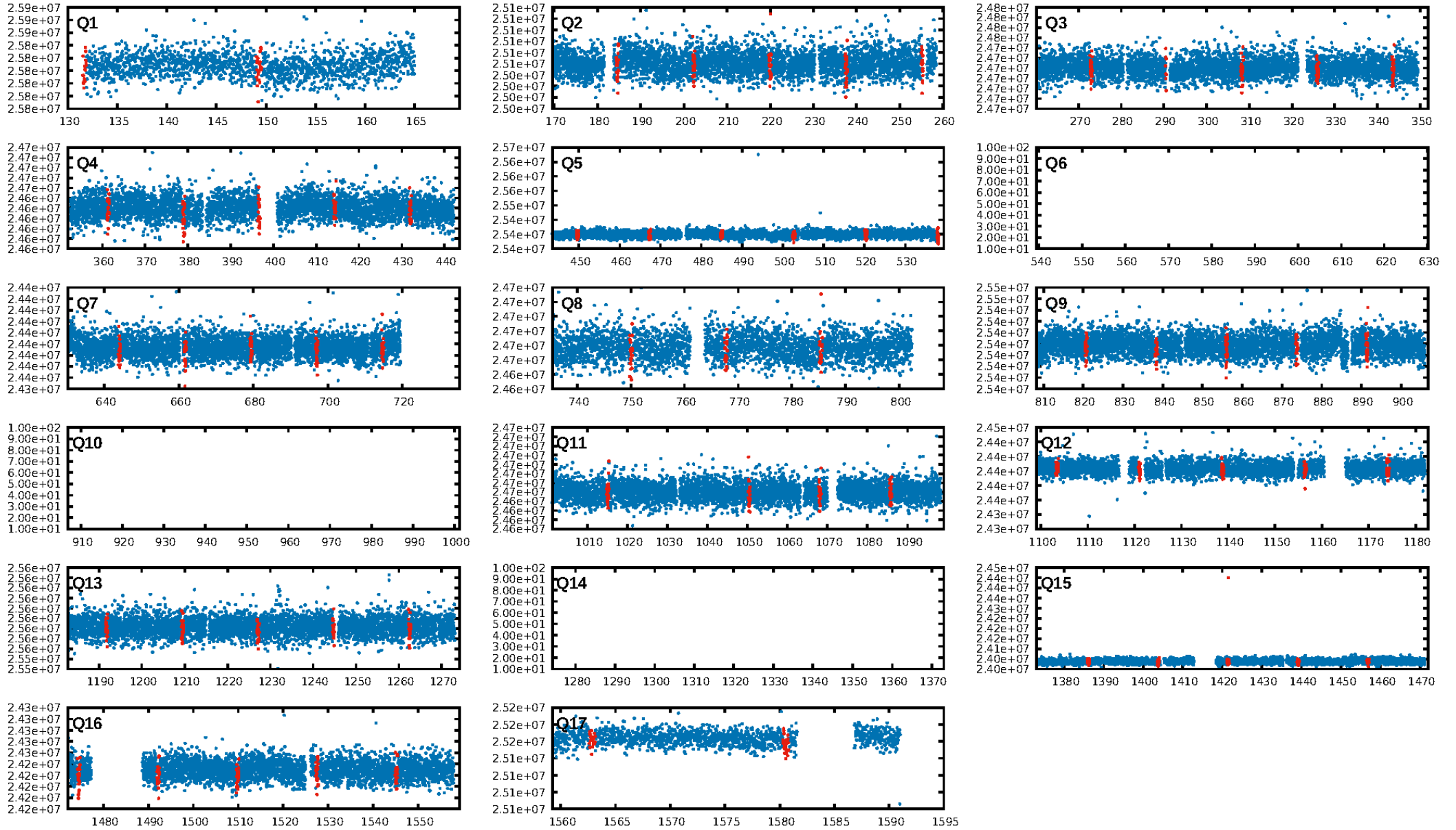
## DV Fit Results:

Period = 17.66997 [0.00013] d  
Epoch = 131.6047 [0.0061] BKJD  
Rp/R\* = 0.0198 [0.0018]  
a/R\* = 9.84 [4.01]  
b = 0.91 [0.08]  
Seff = 86.57 [22.64]  
Teq = 778 [51] K  
Rp = 2.69 [0.52] Re  
a = 0.1347 [0.0216] AU  
Ag = 47.54 [25.23] [1.84σ]  
Teffp = 3158 [370] K [6.38σ]

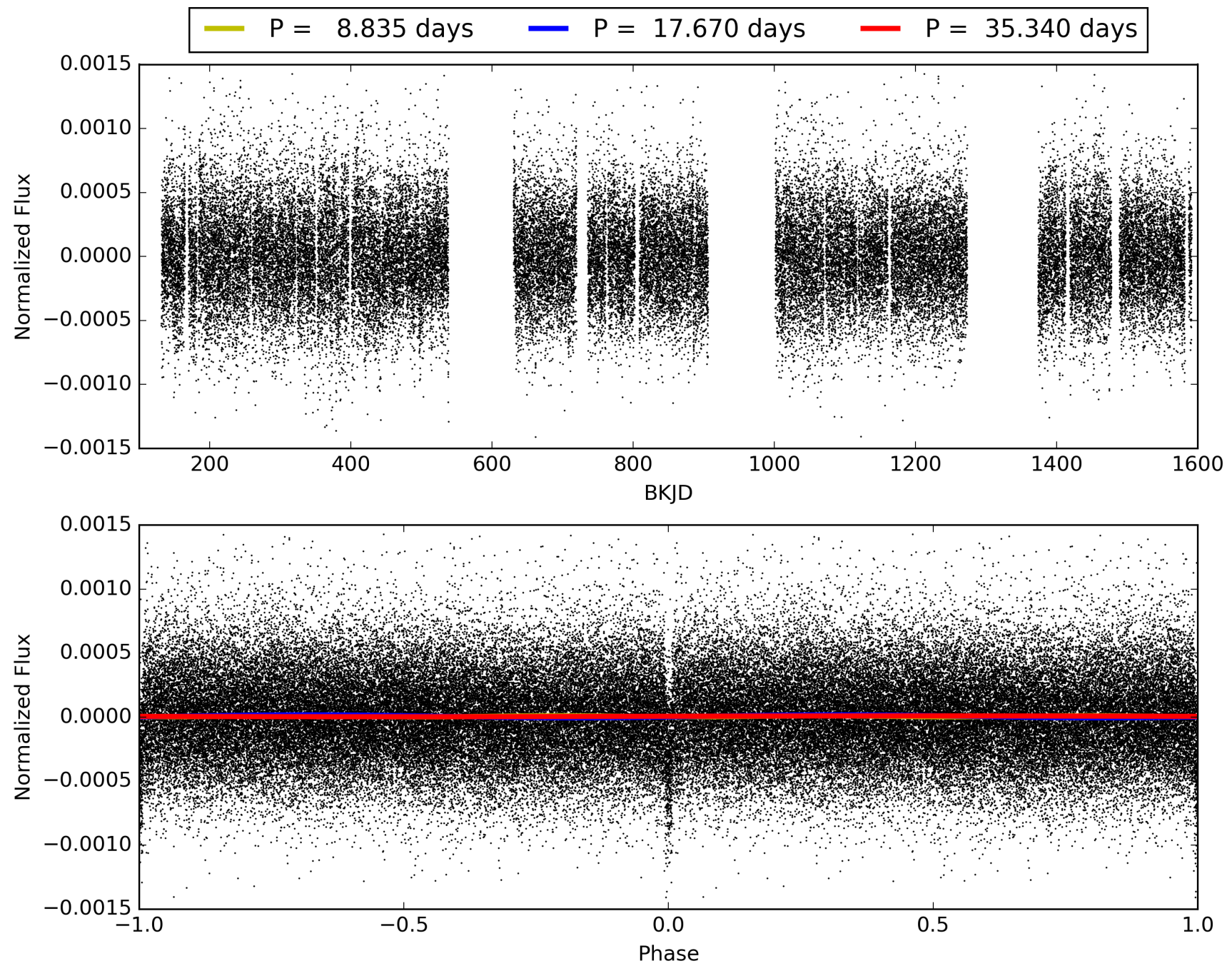
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 9.27e-79  
RollingBand-fgt: 1.00 [57/57]  
GhostDiagnostic-chr: 1.664  
Centroid-sig: 34.5%  
Centroid-so: 0.804 arcsec [1.29σ]  
OotOffset-rm: 0.251 arcsec [0.90σ]  
KicOffset-rm: 0.325 arcsec [1.12σ]  
OotOffset-st: 1/3/4/4 [12]  
KicOffset-st: 1/3/4/4 [12]  
DiffImageQuality-fgm: 0.83 [10/12]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 005546761-01, PDC Light Curves

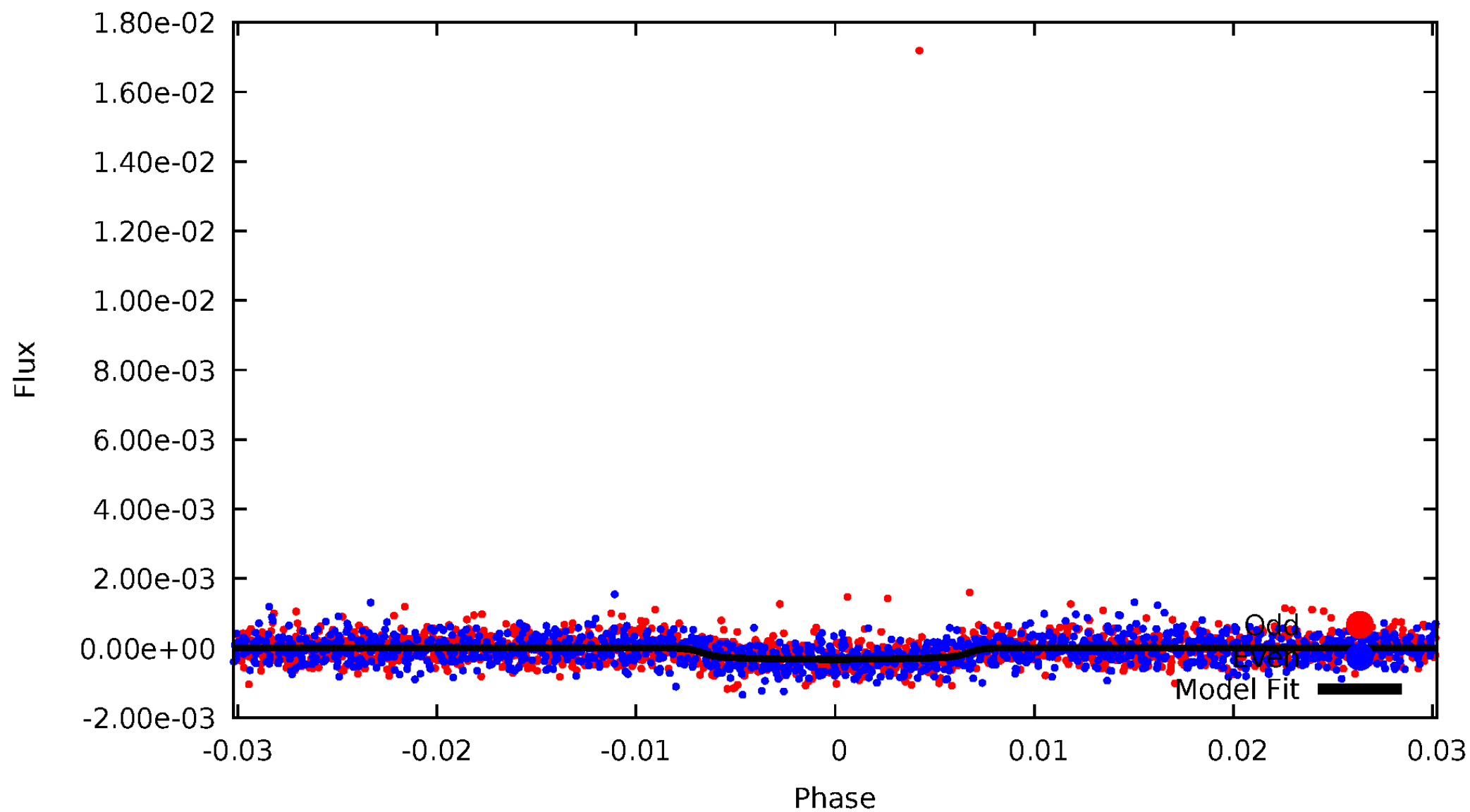


TCE 005546761-01



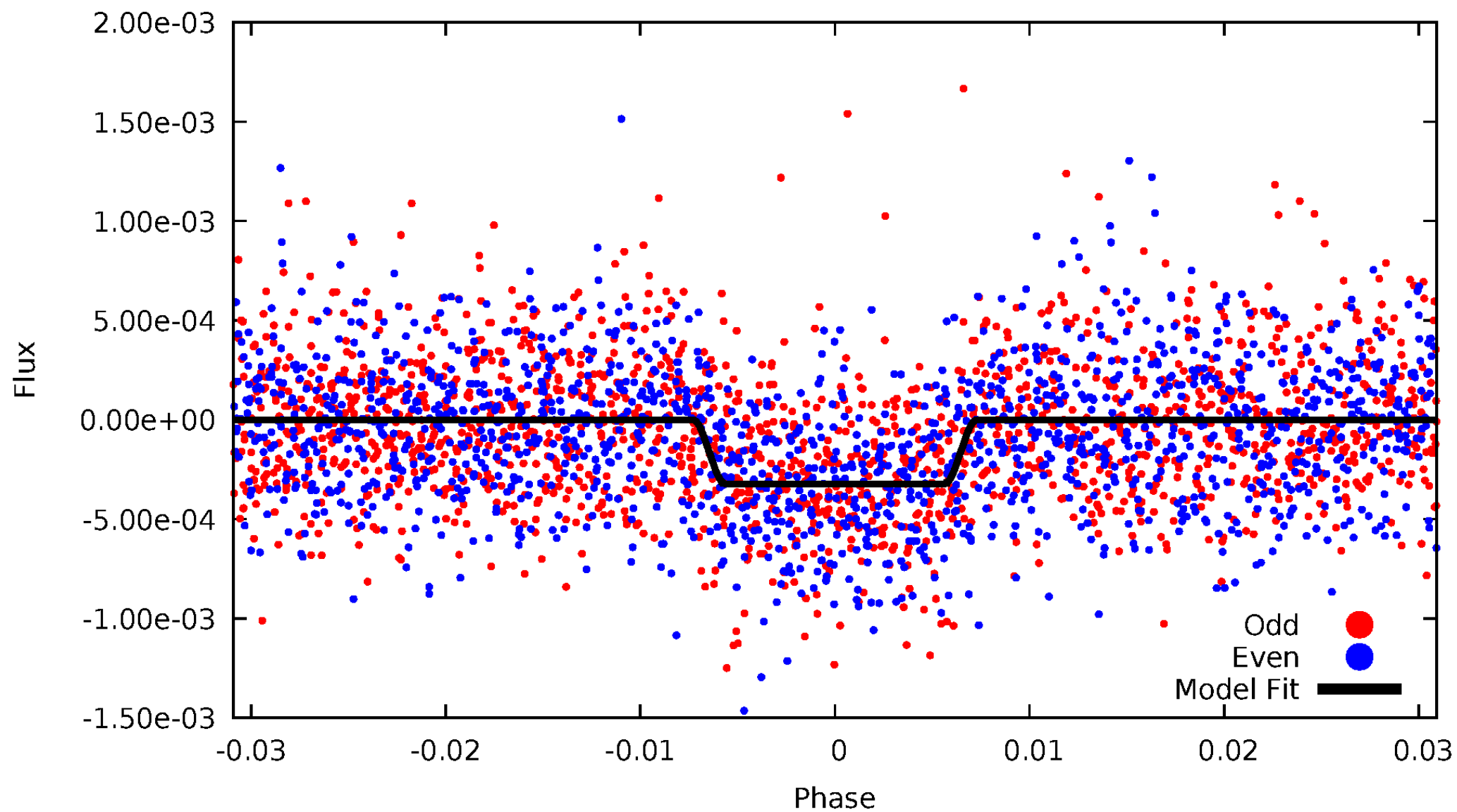
# DV Odd/Even

TCE 005546761-01



# ALT Odd/Even

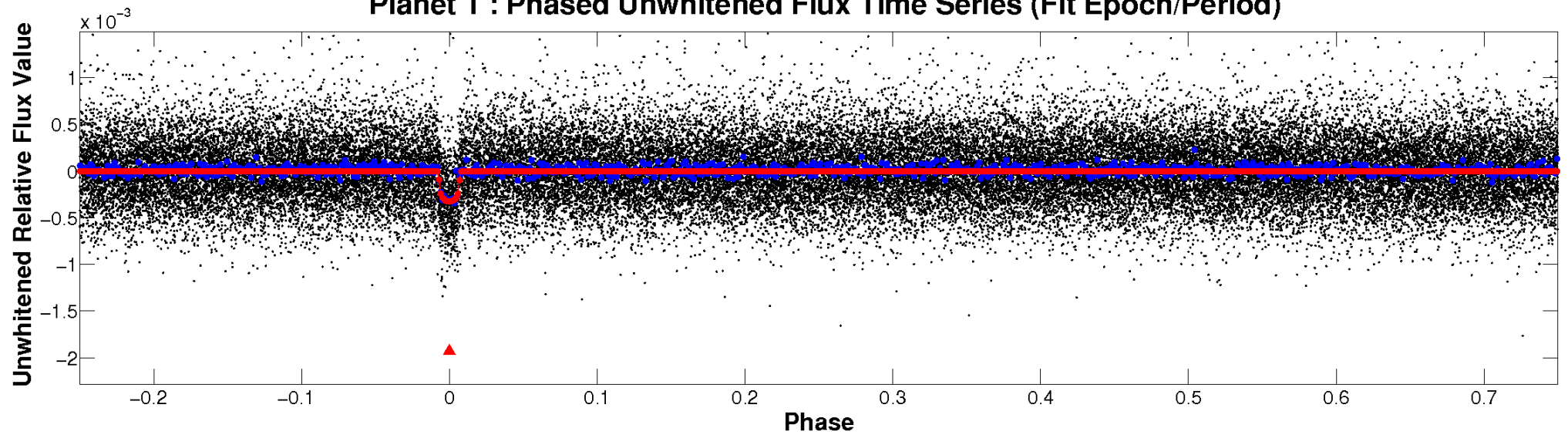
TCE 005546761-01



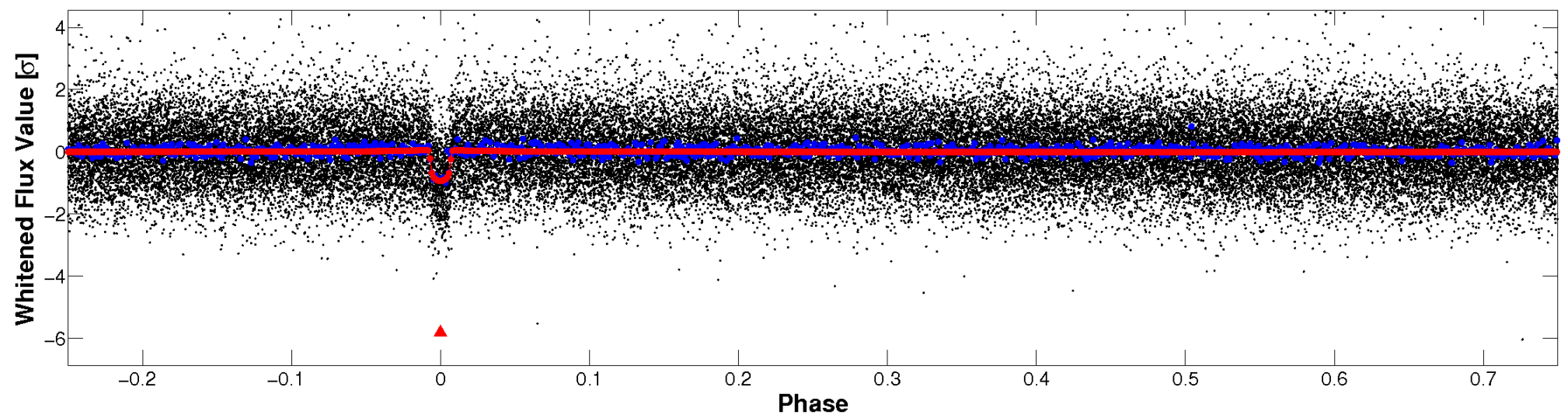


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

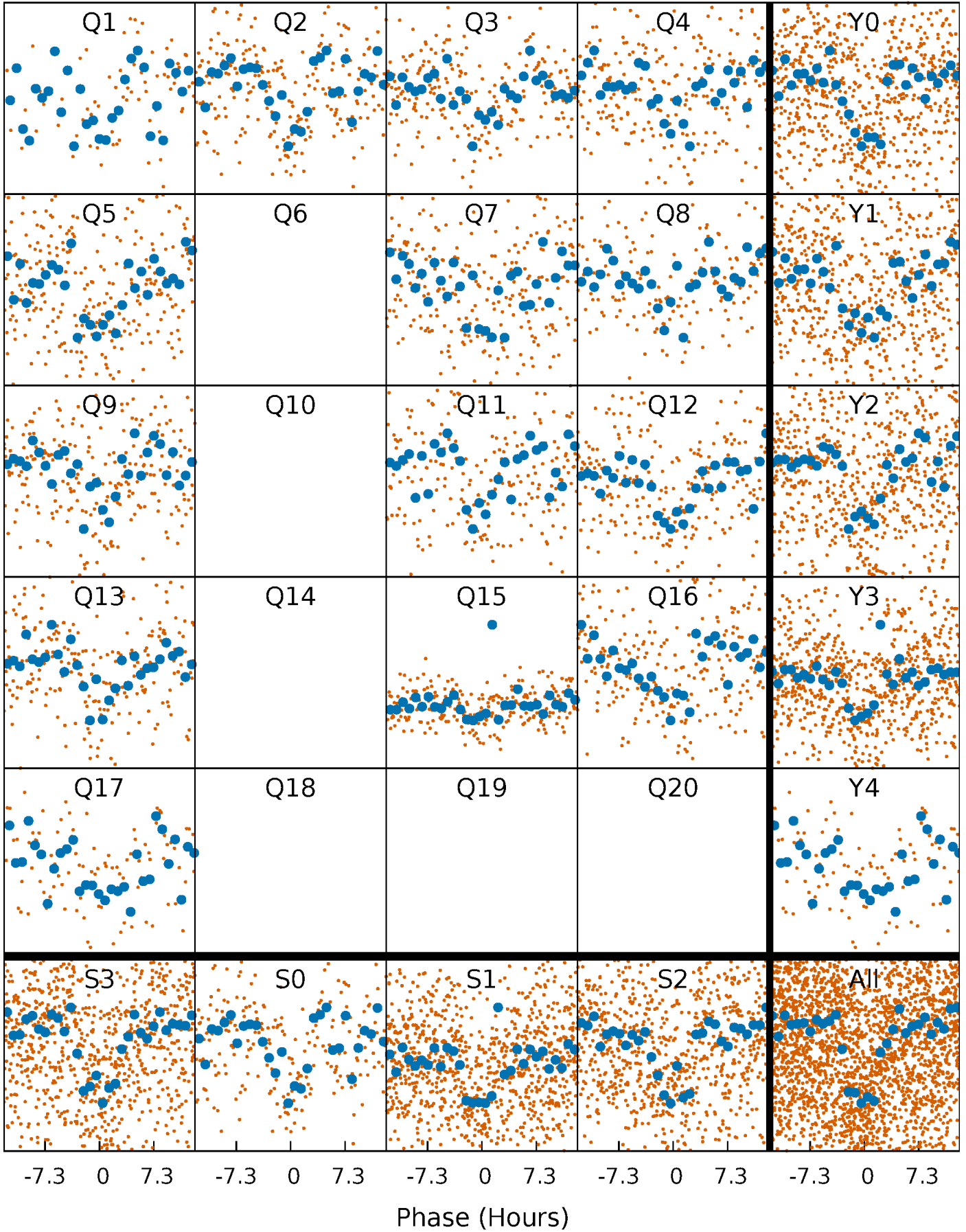


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

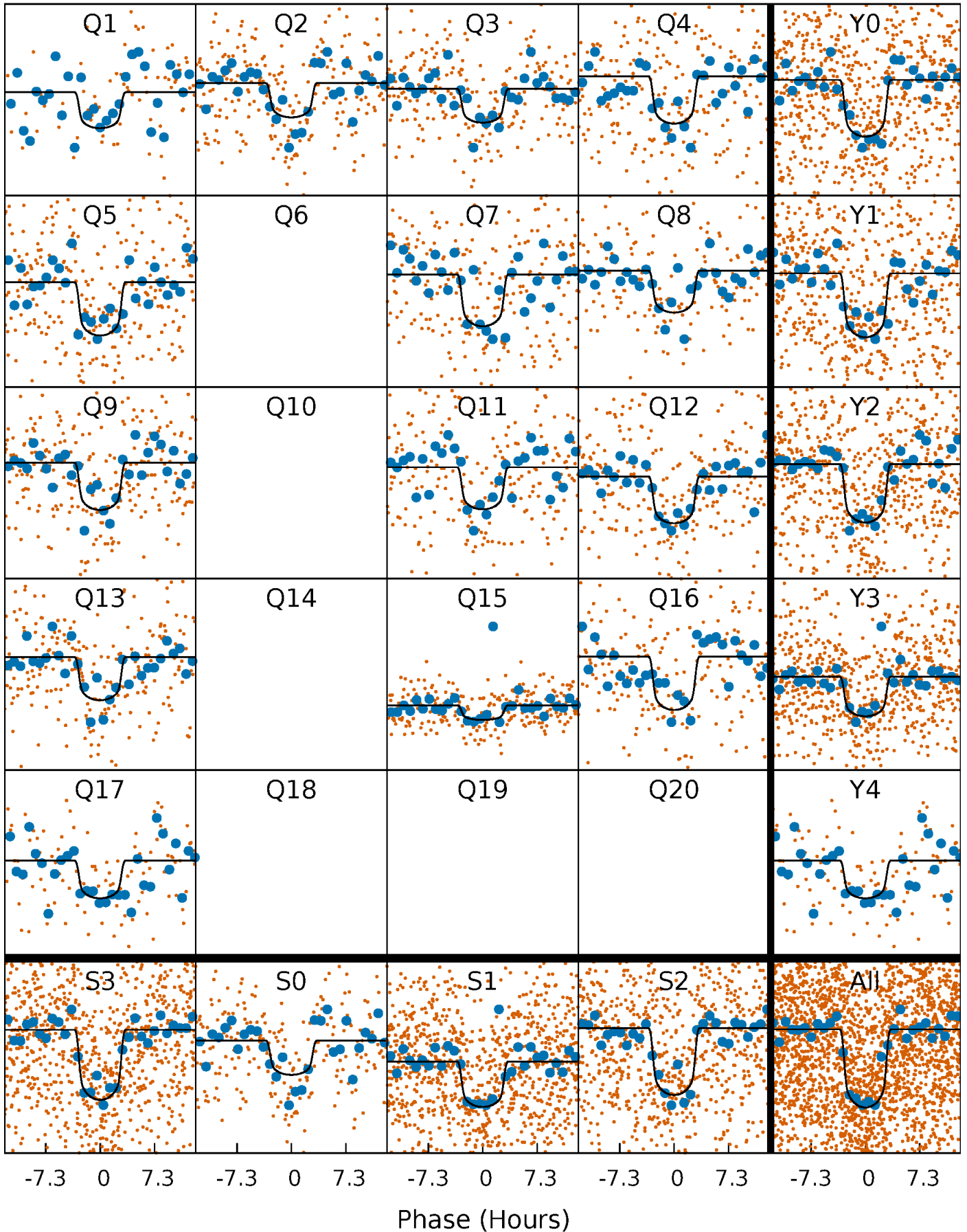
TCE 005546761-01 P= 17.669971 Days  $T_0=131.604661$  (BKJD)





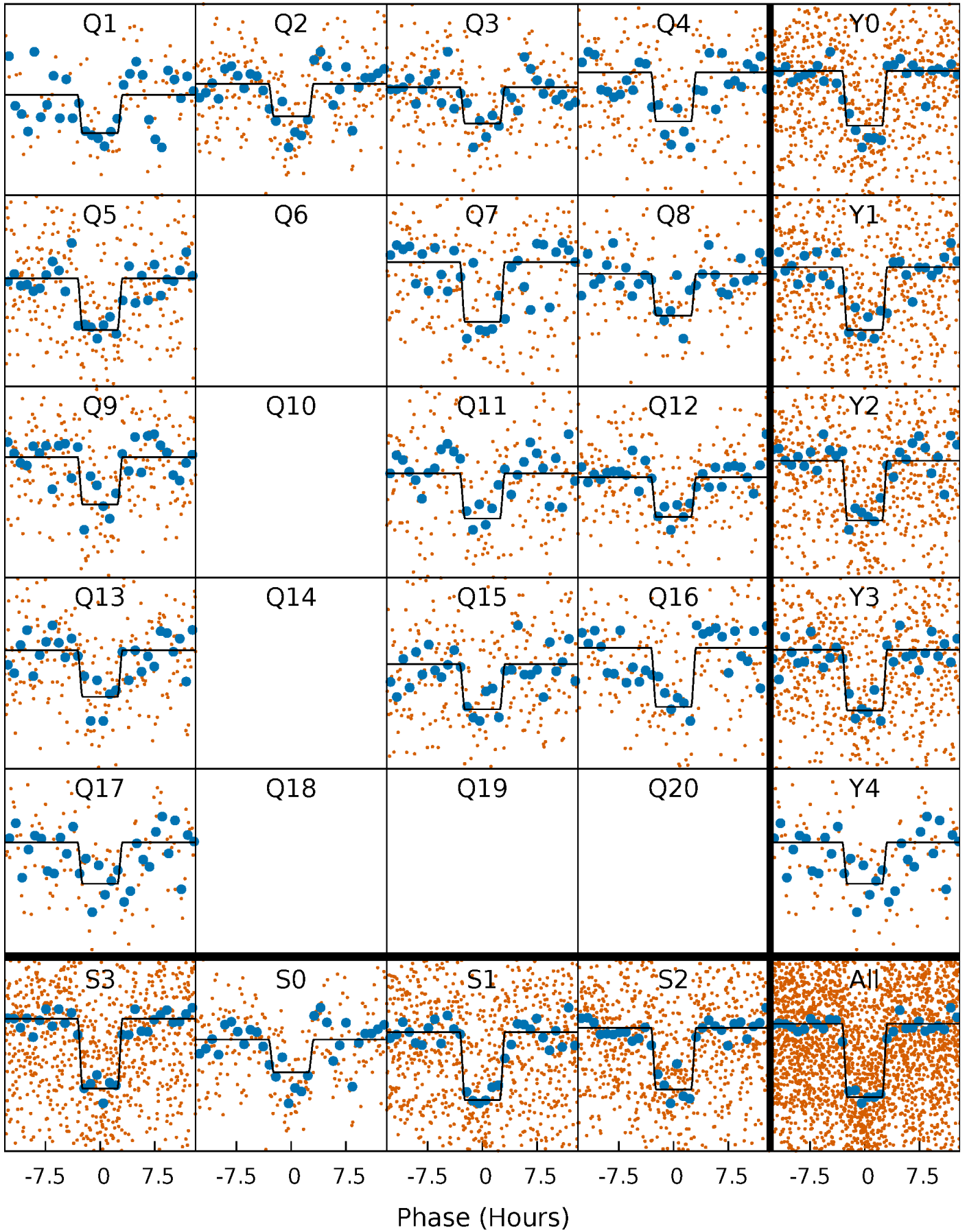
# DV Quarter-Phased Transit Curves

TCE 005546761-01 P= 17.669971 Days  $T_0=131.604661$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

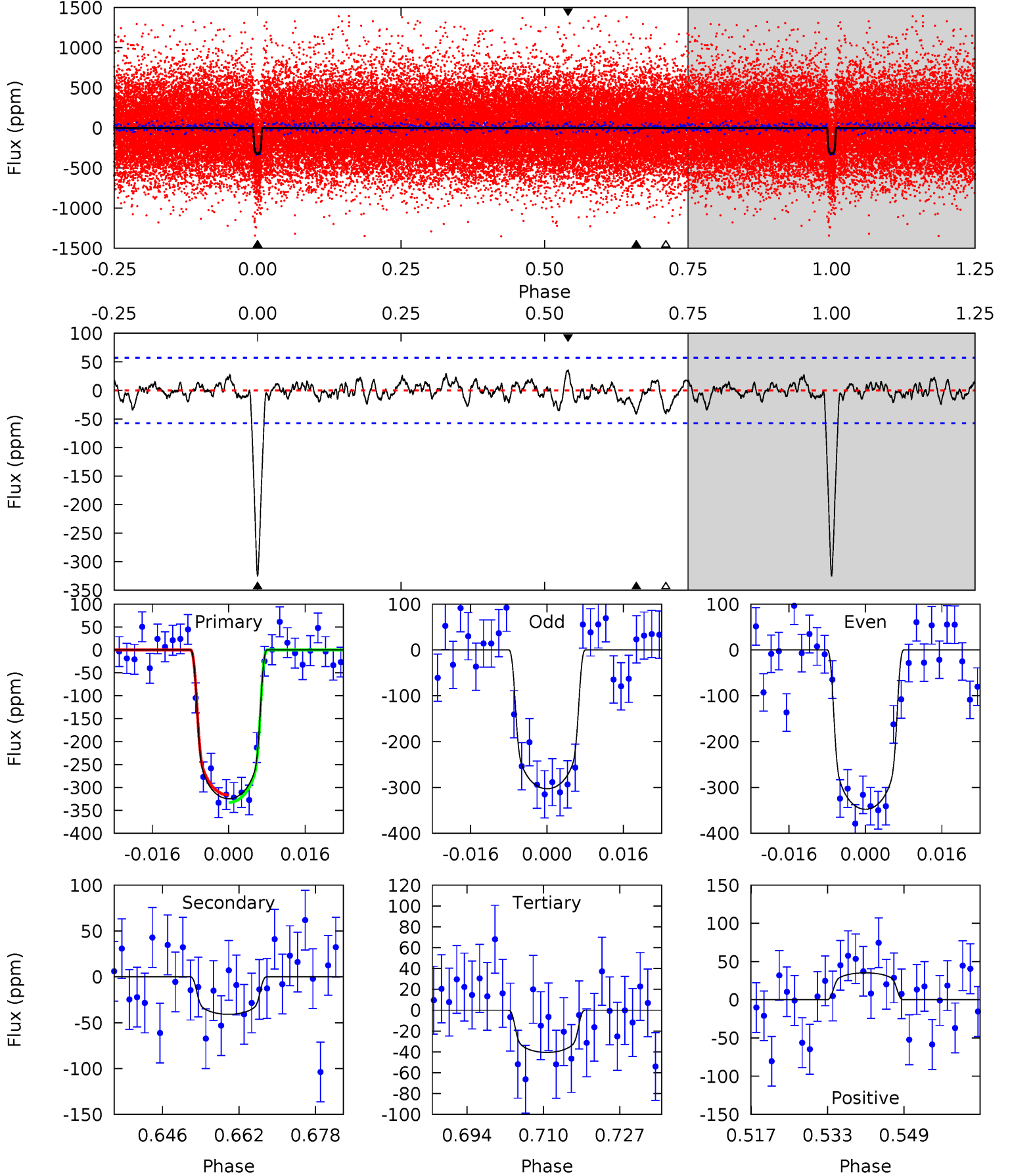
TCE 005546761-01 P= 17.669876 Days  $T_0=131.607814$  (BKJD)



# DV Model-Shift Uniqueness Test

005546761-01,  $P = 17.669971$  Days,  $E = 113.934690$  Days

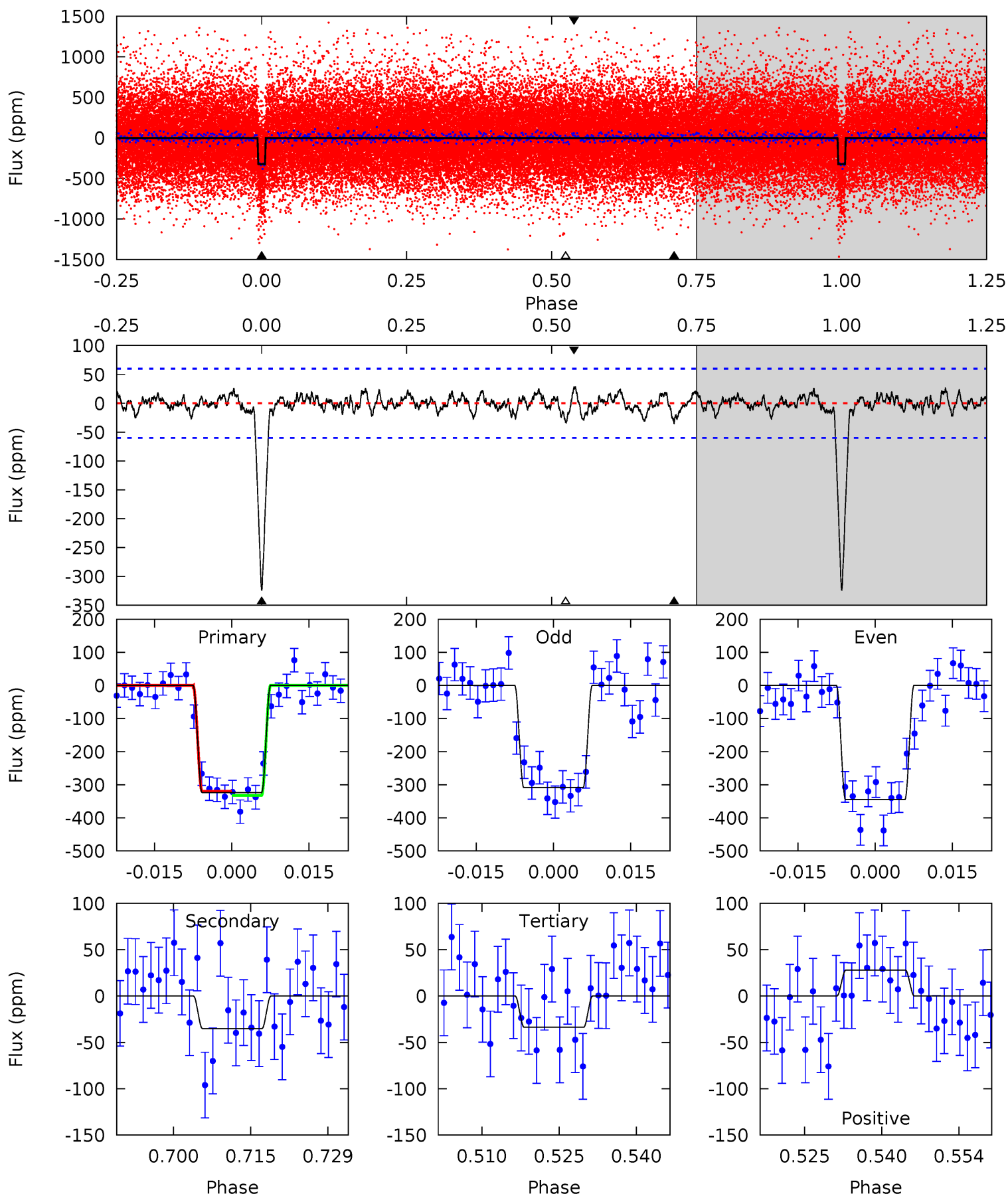
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	3.51	3.49	3.03	4.93	2.41	1.06	24.4	24.9	0.03	0.48	1.93	0.88	0.10	0.69



# Alt Model-Shift Uniqueness Test

005546761-01, P = 17.669876 Days, E = 113.937938 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	2.90	2.78	2.31	4.95	2.44	0.92	24.0	24.4	0.12	0.59	1.50	0.99	0.08	0.51



### Stellar Parameters For KIC 005546761

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5795^{+78}_{-78}$	$4.265^{+0.150}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.247^{+0.209}_{-0.209}$	$1.042^{+0.079}_{-0.063}$	$0.758^{+0.496}_{-0.255}$
	+1%/-1%	+4%/-3%	+94%/-94%	+17%/-17%	+8%/-6%	+66%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005546761-01 / KOI 2160.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-41 \pm 12$	$2.69^{+0.36}_{-0.34}$	$1086^{+50}_{-53}$	$3690^{+223}_{-205}$	$55^{+27}_{-18}$
Alt.	$-35 \pm 12$	$2.42^{+0.33}_{-0.30}$	$1083^{+54}_{-48}$	$3708^{+245}_{-273}$	$58^{+29}_{-23}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$



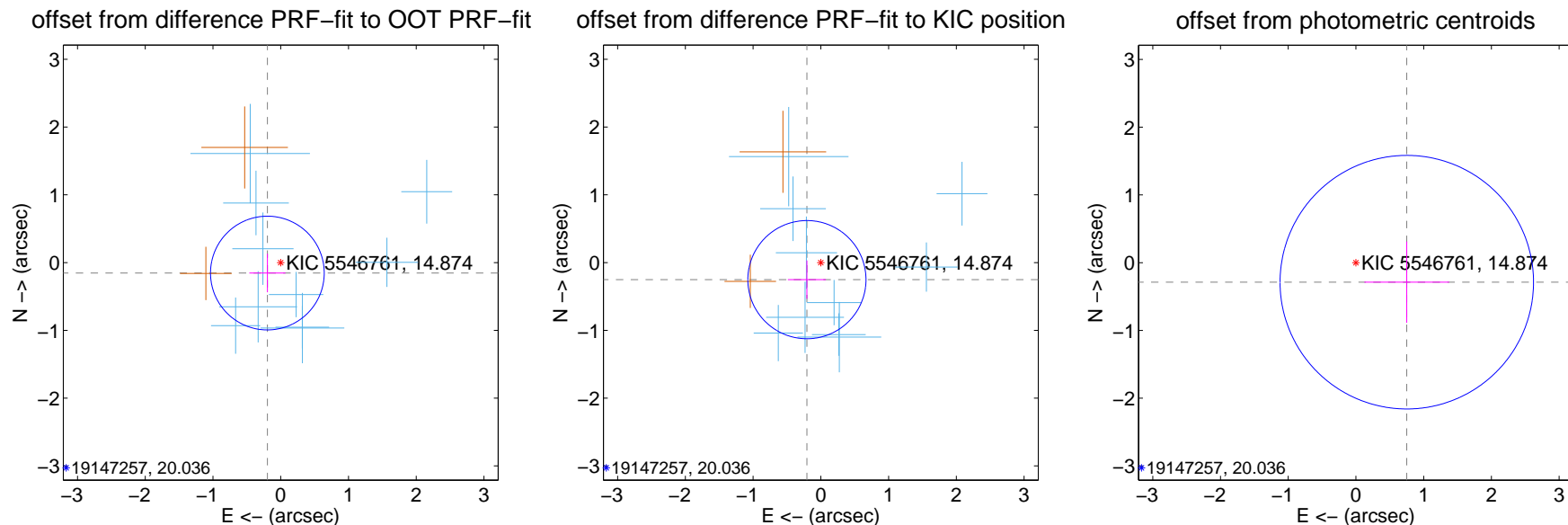
## DV Centroid Data

Supplemental centroid analysis for 005546761-01. Kepler magnitude: 14.87. Transit SNR 21.39

There are 10 quarters with good PRF difference image offsets

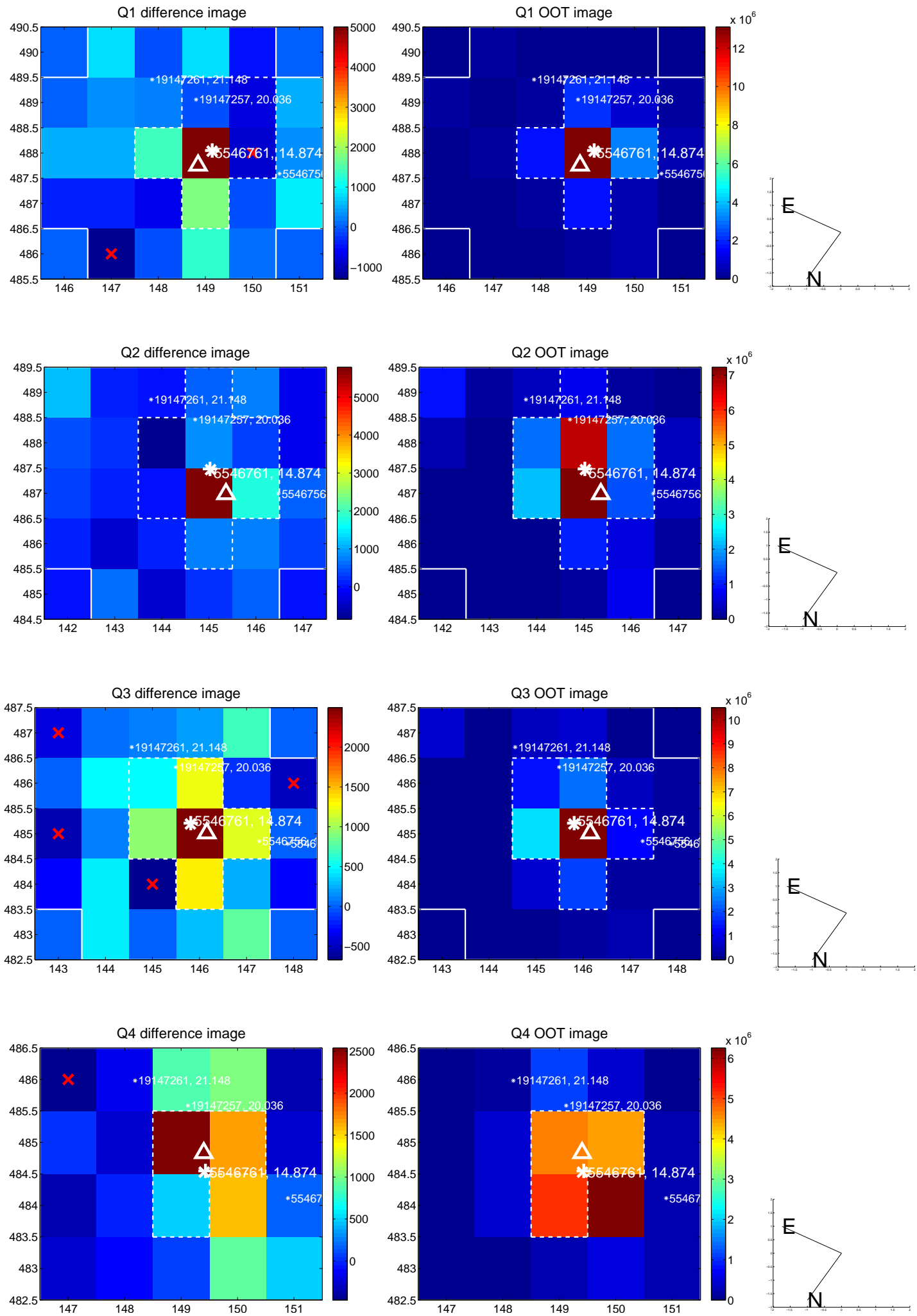
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.251 \pm 0.280$	0.90	$0.197 \pm 0.267$	$-0.154 \pm 0.284$
PRF-fit source offset from KIC position	$0.325 \pm 0.291$	1.12	$0.206 \pm 0.280$	$-0.252 \pm 0.283$
photometric centroid source offset	$0.80 \pm 0.62$	1.29	$-0.75 \pm 0.63$	$-0.29 \pm 0.60$

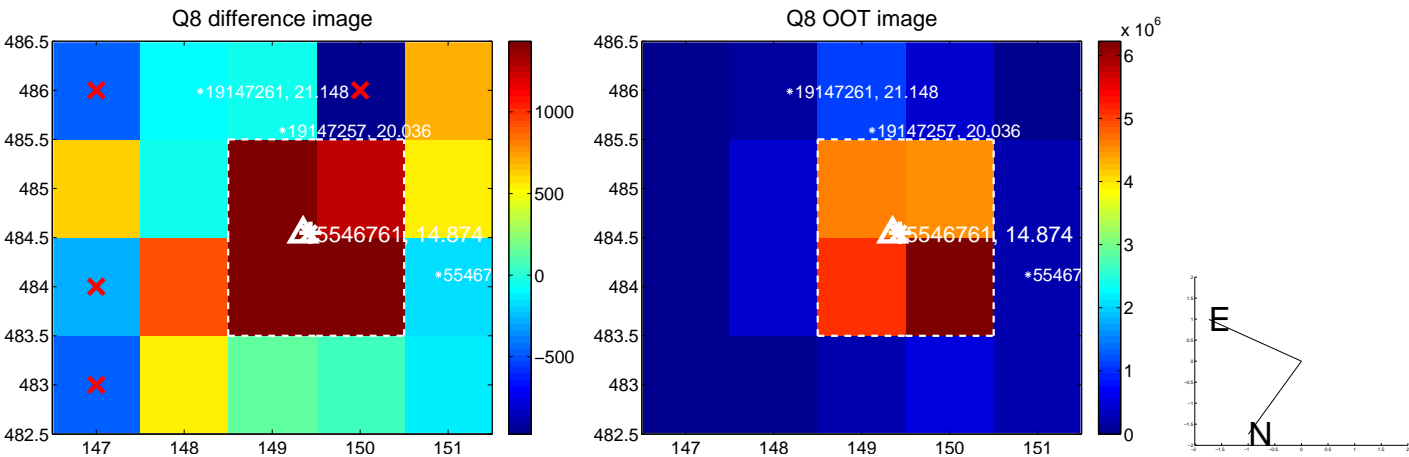
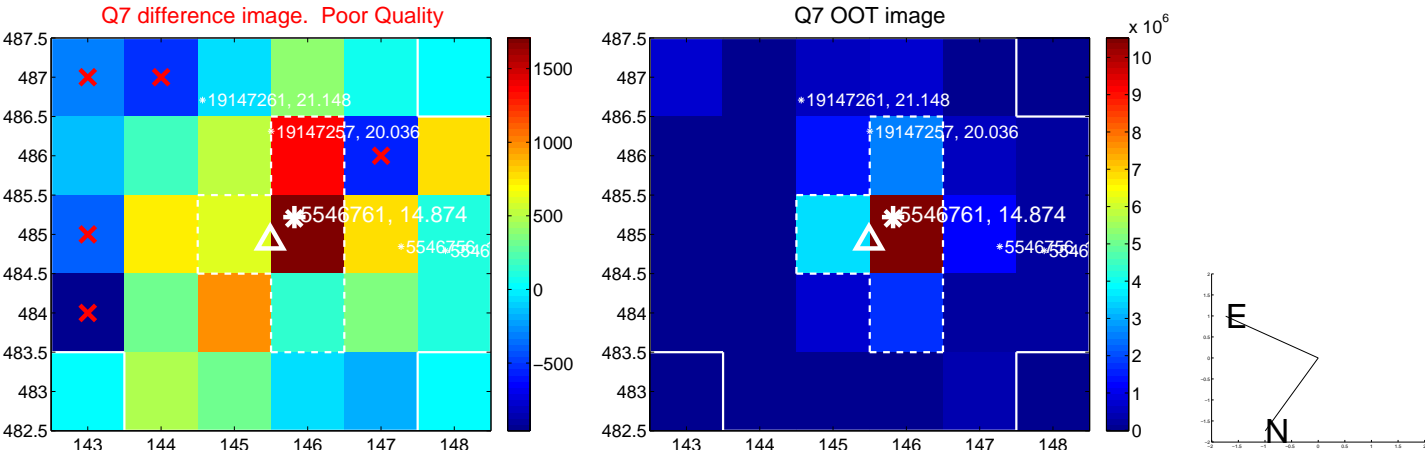
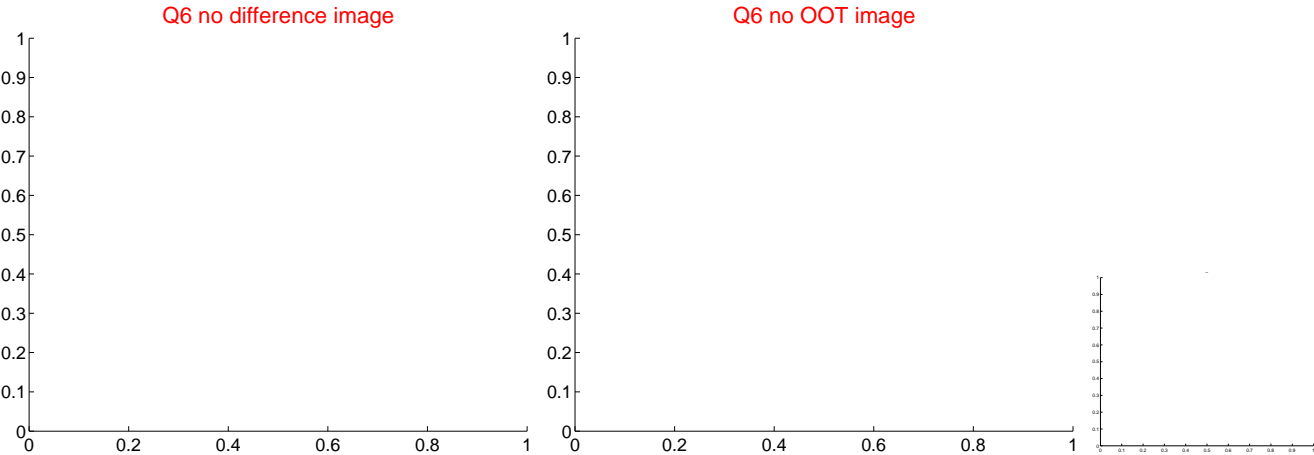
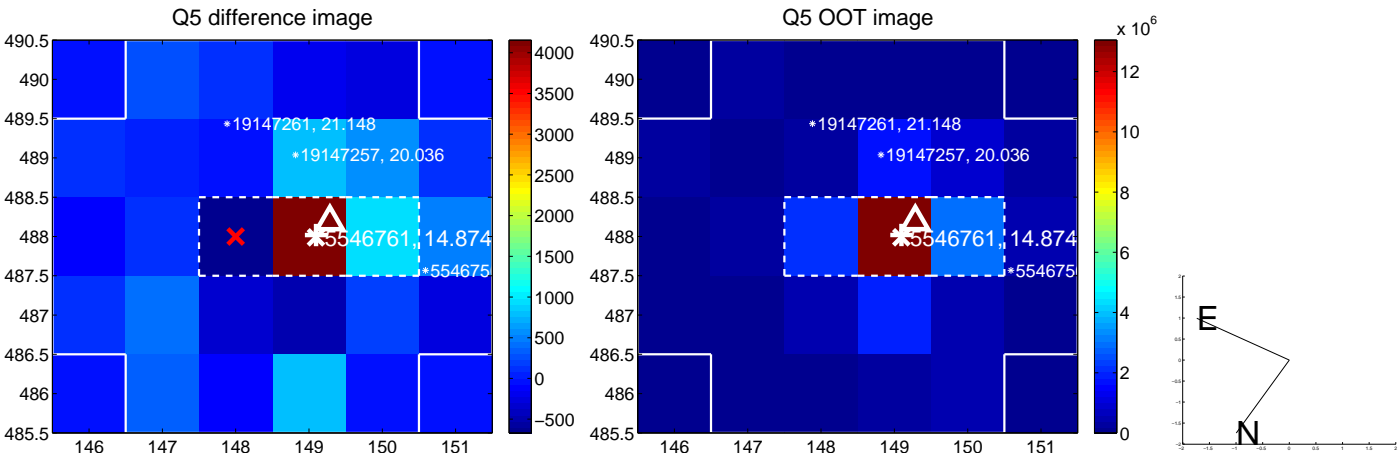


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

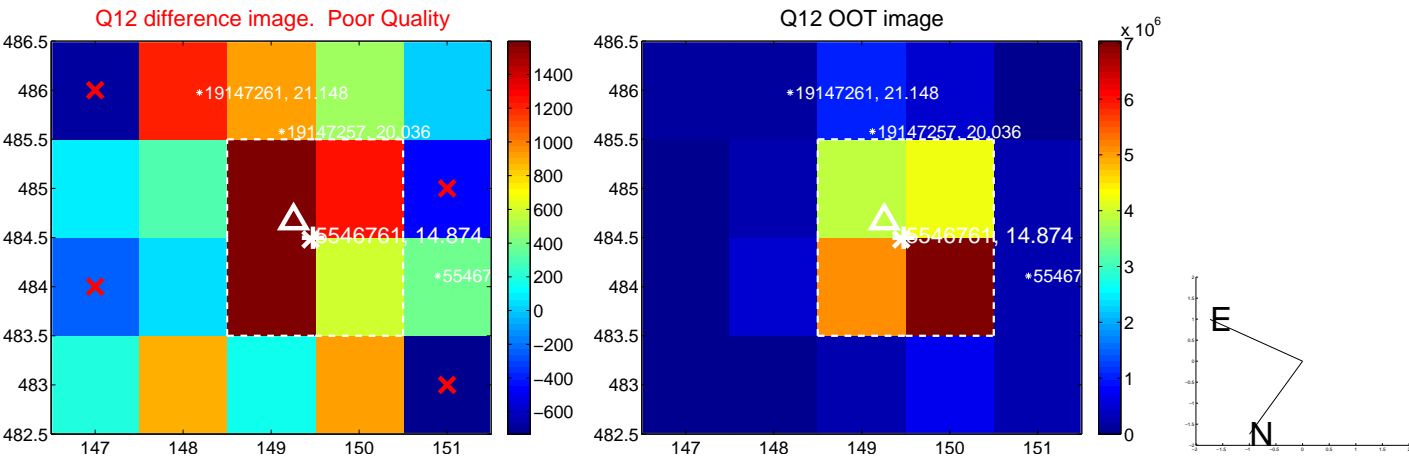
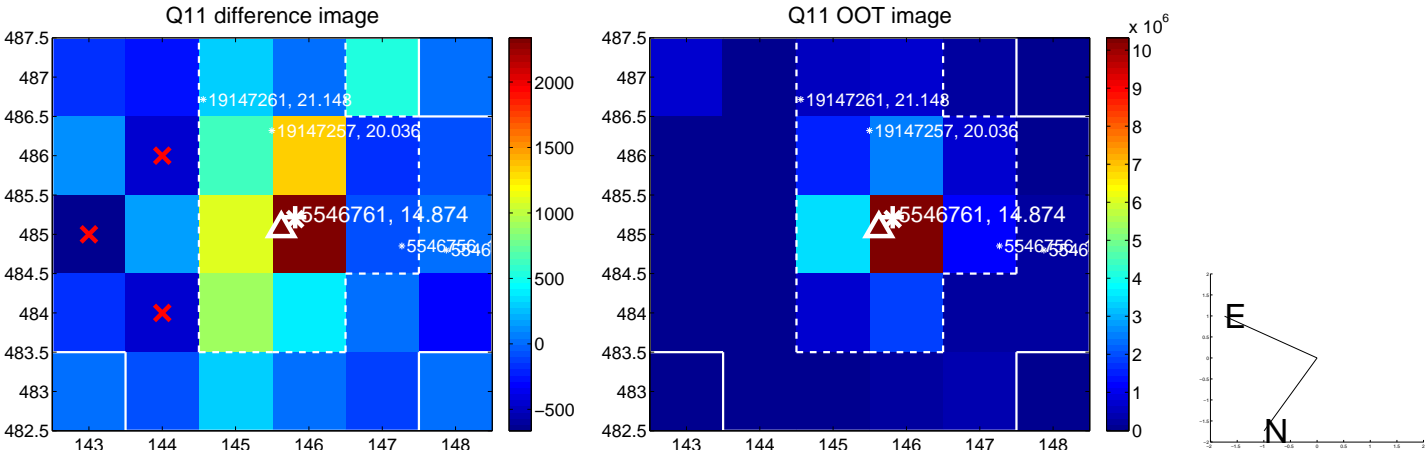
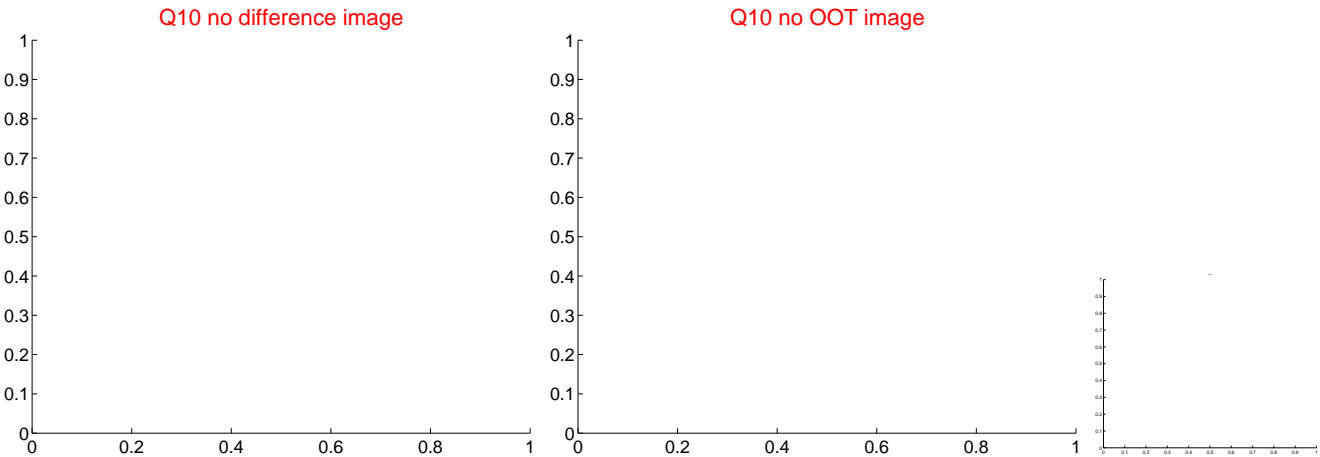
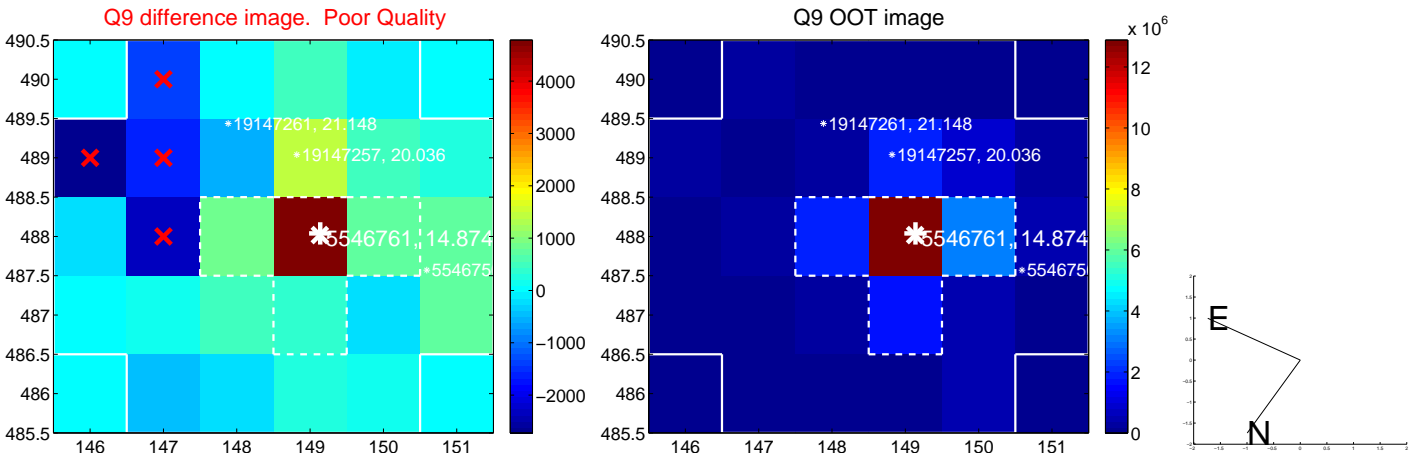
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



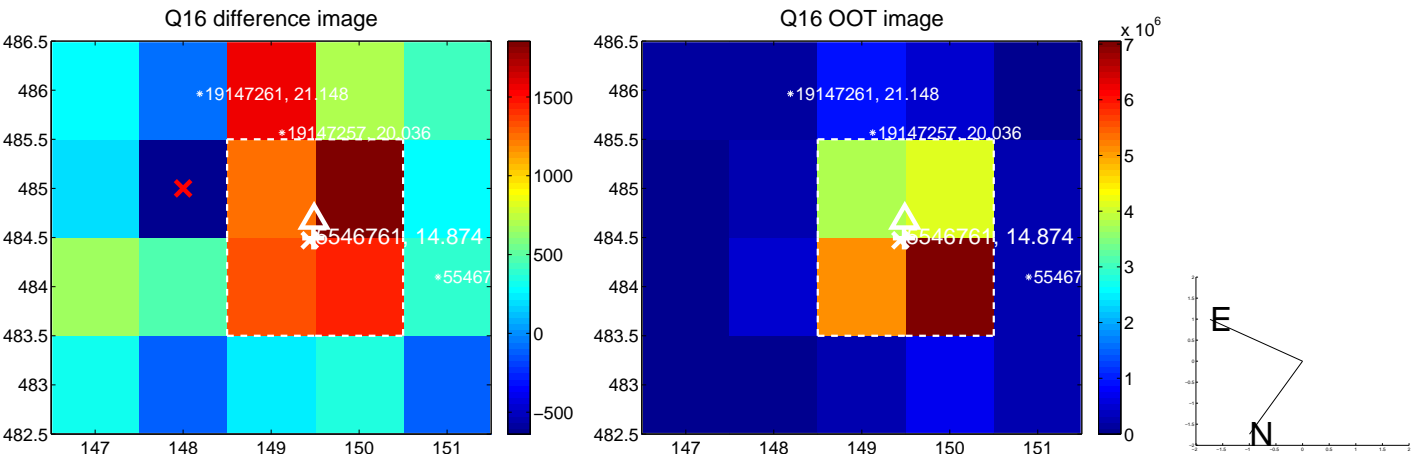
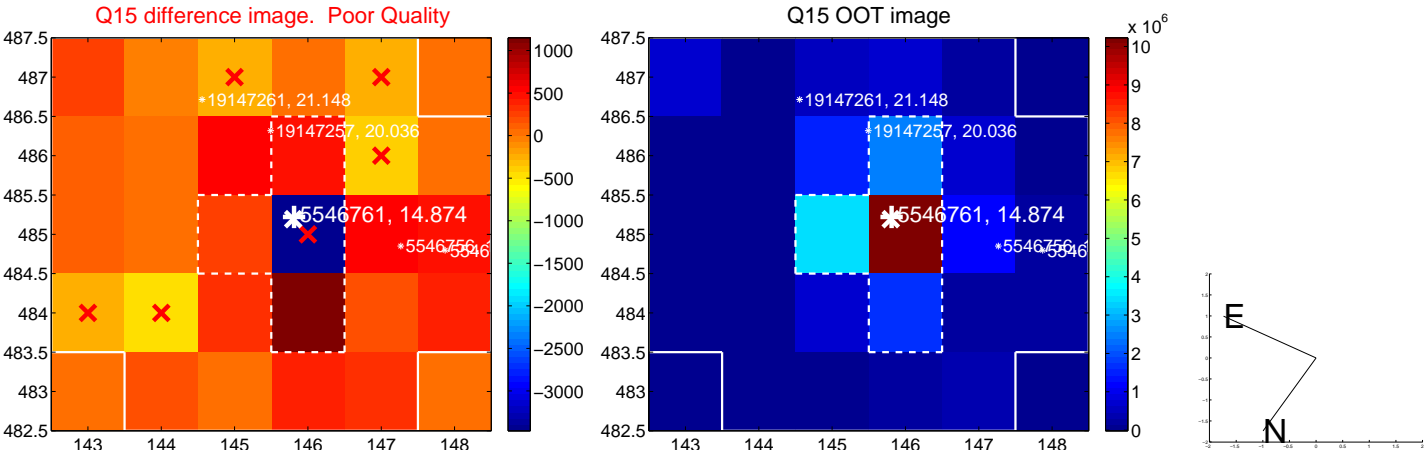
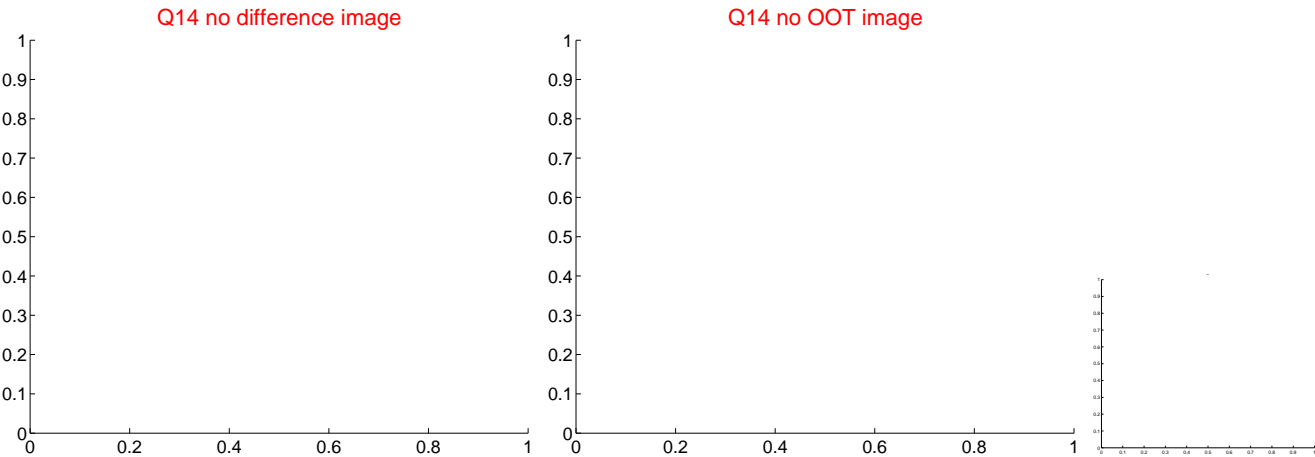
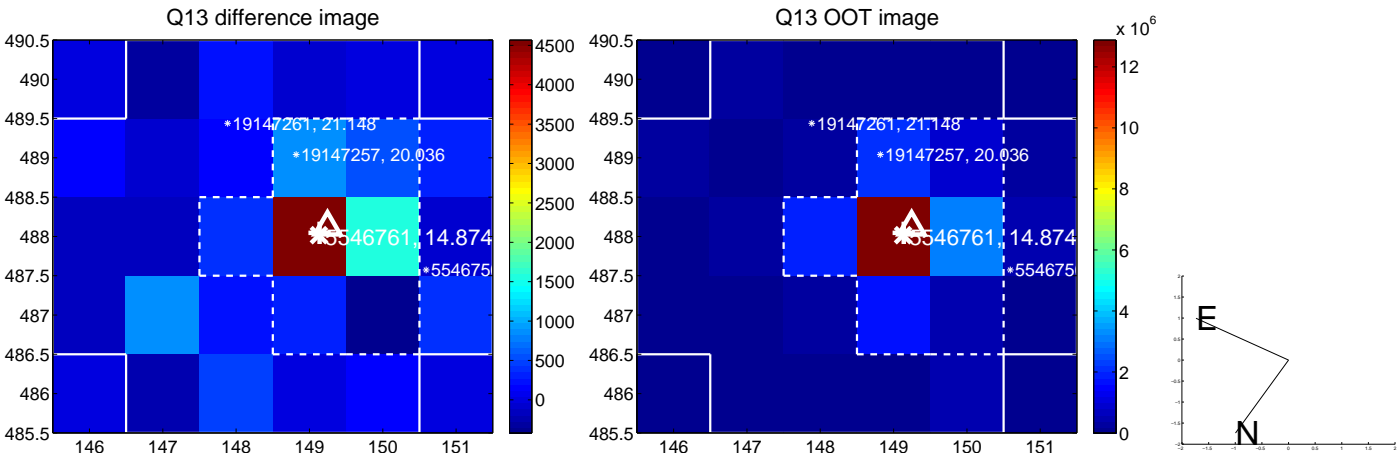
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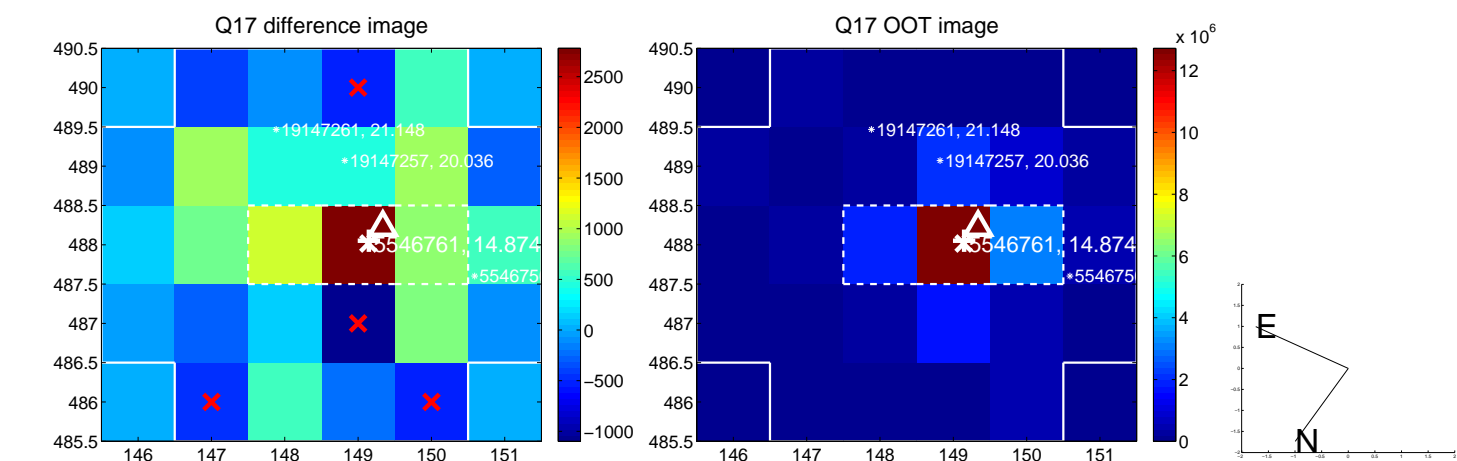


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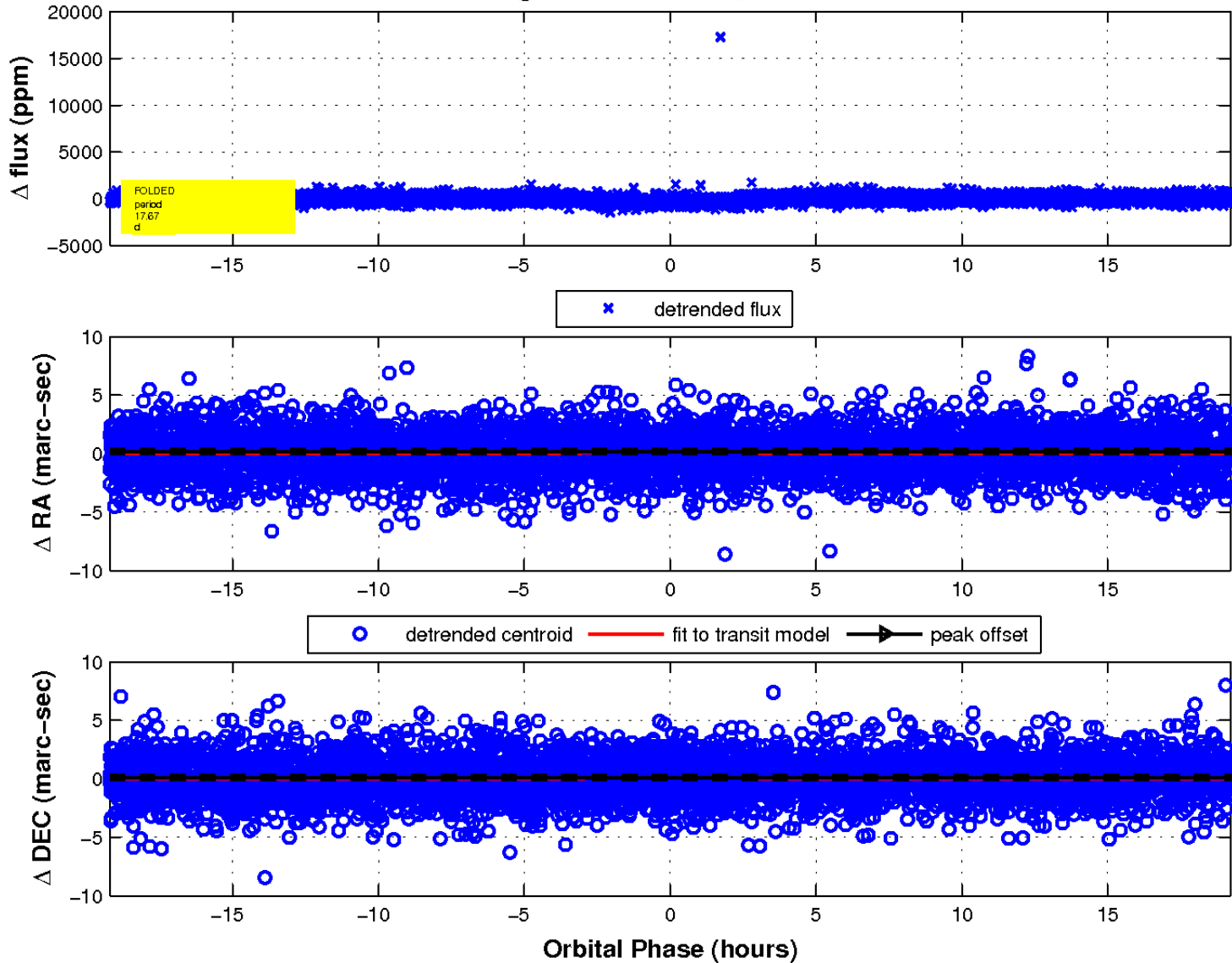




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

